≋USGS

Africa Physical and Cultural Geography Project
Activity 1

Instructions for Students

Goal: Understand the interrelationships among characteristics of the physical environment of Africa.

Step 1. Open ArcView GIS

ArcView

Once it opens, click on "New" in the "Untitled" window. Enlarge the "View 1" window.

Select "Add Theme" with the   tool.

At the top left of the open dialog box, click on "AV_GIS30a" and select "ESRI." Double-click the Africa folder. On the right side of the open dialog box, click on the following shapes (use the flower key to select multiple items): 30deg.shp, lakes.shp, country.shp, relief.shp, and rivers.shp. Click the "add" button to add the shapes to your view.

To Save:
 Choose "Save Project" from the file menu.
 The computer will say the machine is set to use floppy disks, click OK.

**Pick "Student Projects" folder by double-clicking it.**
Insert your team name in instead of proj1.apr. Name it yourteamname.apr.
Click Save or Press Return.
Once you have give your project a name, you can save it by using:
   File, Save Project

Step 2. To make the country shapes transparent so that you can see other themes below, access the Legend Editor. Double-click on the Country.shp theme, double-click on colored box, and click on the blank box in the upper left-hand corner in the Fill Palette. Click the "close" box in the upper left to close the Fill Palette. Click "Apply" in the lower right of the Legend Editor, then close the Legend Editor, as in the image at right.
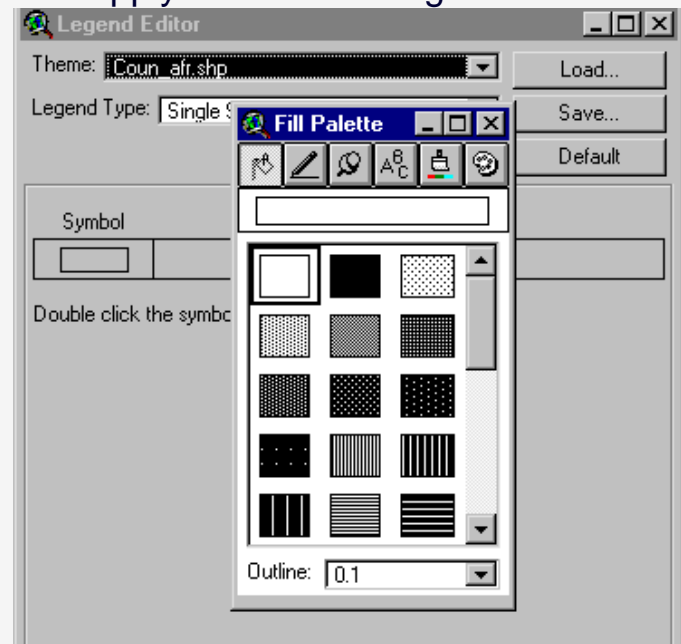
Step 3. Double-click on the relief.shp theme. In the Legend Editor, pull down the "Legend Type" pull-down menu and select "Unique Value." Pull down the "Values Field" and select "Relief" (not "Relief_"). Click the "Apply" button, and close the Legend Editor.

Step 4. Use the zoom tool (looks like a magnifying glass with a + inside, in the tool bar near the top of the screen) and drag a box around the African continent to make it bigger.

Step 5. Double-click Rivers.shp, and double-click on symbol box. Select the color icon at the top of the "Color Palette" window (looks like a paintbrush with color underneath it) , and choose a light shade of blue. Select the line icon (the icon of the pencil drawing a line) and change the size field to 2. Click on "Apply", and close the Legend Editor and Fill Palette.

Step 6. Double-click on Lakes.shp. Change the lakes to blue the same way you did with the rivers. You may need to go to the paint options in the Fill Palette (looks like a paint can) and click on the all black box, so that rivers show up as solids on the map. Click each shape on the left to make them active.

Step 7. Answer the following questions using this map setup.

   A. What is the most common relief form where the rivers begin?

B. Where are the high mountains of the African continent?

C. From their sources, which directions are the following rivers flowing (north, southwest, etc):

      1. Congo

      2. Zambezi

      3. Orange

      4. Nile

Step 8. Go to "Properties" under the "View" menu, type in "relief" in the name field and click on "OK." This will save the present view. Click on box in upper left hand corner to close the Relief view.

Step 9. Click on "New" to open a new view. Select "Add Theme" , and add belt.shp, lakes.shp, rivers.shp, country.shp, and 30deg.shp.

Step 10. Repeat steps 2, 5, and 6.

Step 11. Double-click on belt.shp, and in the legend editor, pull down "Legend Type" and select "Unique Value." Then pull down the "Values" field and select "Belt" (not belt_). Double-click on "Apply" and close the Legend Editor.

Step 12. Drag rivers and country themes above the Belt theme to see these features above the climatic belt.

Step 13. Answer the following questions using this map setup.

A) In which belt do the fewest rivers begin?

B) In which belt do the most rivers begin?

C) Which belt do you expect to be the most densely populated?

Step 14. Pull down "View" and select "Properties." Type in "Climate" in the name field and click on "OK." This will change the name of the view. Click on the box in the upper left hand corner to close the climate view.

Step 15. Click on "New" to open a new view. Select Add Theme .   Add precipyr.shp, lakes.shp, rivers.shp, 30deg.shp, and country.shp.

Step 16. Repeat Steps 2, 5, and 6.

Step 17. Double-click on precipyr.shp, pull down the Legend Type and select "Graduated Color." Pull down the classification field and select "low_p." Click Apply, and close Legend Editor.

Step 18. Move countries, rivers, and lakes to the top.

Step 19. Answer the following questions using this map setup.

   A. Identify countries in which a desert is located that you have not already learned about from previous maps.

   B. In what precipitation belt do most rivers begin?

Step 20. Pull down the View menu, and select Properties. Type in "precip" in the name field

and click on "OK." This will save the present view. Click on the box in the upper left-hand corner to close the precip view.

Step 21. Create a new view and Add Theme ( ) veget.shp. This is the vegetation for Africa. Double-click on this theme for the Legend Editor. Pull down Legend Type and select "Unique Value." Pull down the classification field and select "vegtype." Click Apply, and close Legend Editor. Go to View, Properties and change the name of this view to Vegetation. Save your project. By moving back and forth between the Vegetation and Relief views, or by resizing the views and making both of them visible on the screen, answer the following questions:

   A. Zoom in on north Africa in the Relief view. What are the vegetation types north of the Atlas Mountains?

   B. What is the influence of the Atlantic Ocean on the coastal vegetation of Western Sahara?

   C. What is the primary vegetation of the low coastal plain of Libya?

   D. Zoom in on equatorial Africa. Do all the tropical rain forest areas share the same relief? Explain.

    E. How does the topography on the east coast of South Africa explain the desert scrub on the west coast?

    F. What is the dominant relief feature of the tropical grasslands?

Save your project, and Exit ArcView.

*** End of Activity 1 ***

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